Function Evaluations

① $h(t) = 5^{2t}$ Find $h(-2)$

$h(-2) = 5^{2(-2)} = 5^{-4} = \frac{1}{5^4} = \frac{1}{625}$

② $f(x) = 4x^2 + 5$ find $f(3x)$

$f(3x) = 4(3x)^2 + 5$

$= 4(9x^2) + 5$

$= 36x^2 + 5$

③ $g(x) = x^2 + 1$ find $g(x+3)$

$= (x+3)^2 + 1$

$= (x+3)(x+3) + 1$

$= x^2 + 6x + 9 + 1$

$= x^2 + 6x + 10$

④ $v(t) = \frac{t^2 + t}{2t - 1}$ find $v(t^3)$

$= \frac{(t^3)^2 + (t^3)}{2(t^3) - 1}$

$= \frac{t^6 + t^3}{2t^3 - 1}$

⑤ If $d(2) = 5$ and $d(x) = 6x + k$ what is k?

$d(x) = 6x + k$

$6(2) + k = 5$

$12 + k = 5$

$k = -7$